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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 926.600	11 26 2001	Kenji Abiko	P 21273	6604

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GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER

WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 02/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

#S-5

Office Action Summary

Application No.	Applicant(s)
09/926,600	ABIKO, KENJI
Examiner	Art Unit
Harry D Wilkins, III	1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133.)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa et al (EP 597,129).

Fujisawa et al teach the invention substantially as claimed. Fujisawa et al teach (see abstract) and Fe-Cr alloy containing up to 60 wt% Cr, where the total content of C, N, O, P and S are limited to 100 ppm or less. Fujisawa et al describe (see page 35 in Table 1 (1)) that the contents of: C+N are typically below 40 ppm, with several examples (5, 6 and 11) falling below 20 ppm; O is typically below 30 ppm (the O as an oxide must be less than this value); and, S is typically below 20 ppm.

Fujisawa et al fail to meet the claimed "Cr: exceeding 60 wt%". However, the claimed composition range of Cr would have been obvious to one of ordinary skill in the art because the prior art range is close enough, e.g. - 60 wt% vs. 60.0001 wt% that it would have been expected to have the same properties. see MPEP 2144.05.

Regarding claims 3 and 4, because the alloy of Fujisawa et al is nearly identical in composition, particularly in terms of the impurities C, N, O and S, one of ordinary skill in the art would have expected the alloy of Fujisawa et al to have the same strength-ductility balance as claimed.

Regarding claims 2, 5 and 6, though Fujisawa et al teach limiting the Cr to only 60 wt% or less, one of ordinary skill in the art would have been motivated to have increased the Cr content of the alloy because additional Cr would have added more oxidation resistance to the alloy (see paragraph spanning pages 15 and 16). The teaching against going above 60 wt% Cr is for economic reasons alone, and thus, in view of increased properties, does not constitute a direct teaching away. Therefore, it would have been obvious to one of ordinary skill in the art to have increased the Cr content in the alloy to not less than 65 wt% because the increased Cr content would add oxidation resistance to the alloy. Because the alloy of Fujisawa et al is identical in composition, particularly in terms of the impurities C, N, O and S, one of ordinary skill in the art would have expected the alloy of Fujisawa et al to have the same strength-ductility balance as claimed.

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shida et al (JP 07-278718) in view of Abiko (JP 08-225899).

Shida et al teach (see English abstract) a Cr-Fe alloy that contains at least 70% Cr (by weight, see Table 1, page 4) with reduced N and O impurities.

However, Shida et al do not teach limiting C+N to less than 20 ppm, S to less than 20 ppm and O to less than 100 ppm, with O as oxides at less than 50 ppm.

Abiko teaches (see English abstract) a method of making an alloy that produces very low amounts of gaseous impurities. Abiko teaches (see paragraph 9) that Cgi is the total quantity of the gas constituents in weight ppm. Abiko teaches (see paragraph 17) that the gas constituents are C, N, S and O. Abiko teaches (see Table 1) several

Fe-Cr alloys that have Cgi (5th column) 9.1 ppm, 15.0 ppm and 18.5 ppm. Therefore, one of ordinary skill in the art would have expected the method of Abiko to reduce the amount of C, N, S and O to below 20 ppm total (thus, meeting each of the ranges for C+N, S and O as claimed). Abiko teaches (see English abstract) that the plastic workability of alloys can be improved by the reduction of Cgi.

Therefore, it would have been obvious to one of ordinary skill in the art to have applied the method of making taught by Abiko to the alloy of Shida et al because Abiko teaches that the reduced Cgi improves the workability of Fe-Cr alloys.

Regarding claim 2, Shida et al teaches an alloy with at least 70 wt% Cr.

Regarding claims 3, 4, 5 and 6, because the alloy of Shida et al in view of Abiko is identical in composition, particularly in terms of the impurities C, N, O and S, one of ordinary skill in the art would have expected the alloy of Shida et al in view of Abiko to have the same strength-ductility balance as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-Th 6:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Harry D Wilkins, III
Examiner
Art Unit 1742

hdw
January 24, 2003

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